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30th, November 1951

Dear Professor Lederberg,

Thank you very much for your letter. I am having samples of the sera sent off. The "H" is a very goodserum once the organism is reasonably motile but I found K - 12 had to be kept on the move in Craigie tubes. As regards the K - antiserum it worked well at first. I gota typical agglutination after 4 hours at 50°C with W-677 but not with 58 - 161. However, the capsular antigen was not constantly present and I was unable to define the conditions under which it was as I had to go off on some other work. The great advantage of the K - agglutination is that it avoids most of the trouble due to the roughness of the organism since the control tubes are fairly stable for 2 - 4 hours.

I must congratulate you on the serological hybrid. I have been trying to cross Salmonella types using your antibiotic technique and have succeeded in crossing S. typhimurium with S. Potsdam. The offspring are biochemical recombinants but serologically are all typhimurium. I have set up the cross again after reversing the drug resistances of the parent organisms but the experiment is in the incubator at the moment.

There is one point about the experiment which worries me and I wondered whether you had struck anything similar. The parent Typhimurium ferments neither Trehalose nor Rhamnose, the parent Potsdam ferments both. About 3/4 of the progeny ferment Trehalose but not Rhamnose but this character does not appear for 48 hours while normally the sugar reactions are quite clear in 18 hours or so. I can think of no simple genetic explantion why this should be so if only recombination is involved.

If you have published any of the work on recombination in the Salmonella group I should be grateful for reprints.

Yours sincerely,

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